Amendments to the Specification:

Please replace the paragraph amended in the Amendment dated September 11, 2003 at page 3, first paragraph, which amended the paragraph starting at page 7, line 12 through line 21 of the specification, with the following rewritten paragraph:

The present invention is of a body immobilization and stereotactic localization frame and method comprising use of a non-invasive device for immobilizing a human body from head to pelvis comprising form fitting custom molds for both anterior and posterior portions of the body. In the preferred embodiment, the posterior mold is a vacuum mold or polyurethane foam mold and the anterior mold is a thermoplastic mold, both being reusable over the course of a fractionation or other treatment regimen for the subject patient. The frame comprises two or more imaging localization fiducials each having a repetitive trigonometric waveform wherein one of the two fiducials ~~varies its position along an axis of the frame depending on position in another axis of the frame~~ is offset along the longitudinal axis of the frame relative to the position of a second of the fiducials. ~~Quality assurance markers are placed in opposing pairs at predetermined positions along an axis of the frame. Am imaging resolver (as later defined) is preferably supplied comprising a continuous array of coupled fiducials.~~ The two or more imaging localization fiducials additionally include quality assurance fiducials placed in opposing pairs at predetermined laterally spaced positions parallel to the longitudinal axis of the frame. The word "fiducial" means "designating a line, point, etc. assumed as a fixed basis of comparison", 1 New Shorter Oxford English Dictionary, 942 (Clarendon Press, Oxford England) (1993 Ed.). A fiducial is made from a material (as defined below) that appears in an image as a marker to indicate its location used in the determination of the image stereotactic coordinates.

Please replace the paragraph amended in the Amendment dated September 11, 2003 at page 3, second paragraph, which amended the paragraph starting at page 7, line 23 and ending on page 8, line 2 of the specification, with the following rewritten paragraph:

The present invention is also of a stereotactic localization frame and method employing an imaging resolver (as subsequently defined) comprising a continuous array of coupled fiducials. In the preferred embodiment, two or more imaging localization fiducials have a repetitive waveform ~~that depends~~

~~on position in an axis of the frame,~~ preferably a trigonometric wave form such as a sine or cosine waveform, and most preferably ~~coupled fiducials are provided forming a π/2 horizontal linked sine and cosine wave fiducial pattern~~ the two fiducials are longitudinally offset by a π/2 distance. A non-invasive device for immobilizing a human body from head to pelvis is employed comprising form fitting custom molds for both anterior and posterior portions of the body. ~~Quality assurance markers are placed in opposing pairs at predetermined positions along an axis of the frame.~~

Please replace the paragraph amended in the Amendment dated September 11, 2003 at page 3, third paragraph, which amended the paragraph starting at page 9, first paragraph of the specification, with the following rewritten paragraph:

The localization features of most stereotactic frames are similar, differing mainly in the organization of the coordinate system of the frame and its mechanical dimensions. All stereotactic frames are created for the purpose of immobilization, precise patient repositioning, and localization of volume structures or lesions within the volumetric space defined by the frame and the immobilized body part. With regards to stereotactic frames, the general convention is that the long axis of the body (longitudinal axis) is given the designation of the z-axis in the Cartesian coordinate system of three-dimensional spatial localization. The left-right transverse axis is generally designated as the x-axis and the anterior/posterior (vertical) axis is designated as the y-axis. Most conventional stereotactic frames use incremental indicators in millimeters and centimeters along each axis for precise coordinate referencing. The aim of the stereotactic frame system of the present invention is to permit a wide area of body immobilization and allow precise stereotactic imaging and positioning of body areas within the frame.

The word "waveform" is used to refer to a "wave regarded as characterized by a particular shape or manner of variation, esp. a varying voltage," 2, The New Shorter Oxford English Dictionary, 3638 (Clarendon Press, Oxford, England) (1993 Ed.), and refers to one period or phase length. A "repetitive waveform", refers to a repeating series of the waveform.

Please replace the last paragraph starting at page 13 and continuing on page 14 of the specification, with the following rewritten paragraph:

The imaging resolver fiducial array in the preferred embodiment is arranged ~~along one~~ on the plane (base) of the stereotactic frame. This arrangement requires orthogonal alignment of the stereotactic body frame in the imaging scanner gantry. Alternatively, the imaging resolver may be placed in multiple planes about the body so as to avoid this requirement. In the preferred embodiment, the X (right-left) and Y (anterior-posterior) coordinates can be calculated by determining the size of a millimeter in each of these directions. This can be done using the fixed fiducials of a preset size that are present along the

sides and the back of the body. The Z (superior-inferior) coordinate can be calculated using the angled (or angled and sine-cosine) fiducials on the back (or bottom) of the localizer.

Please replace the first paragraph starting at page 15 of the specification, with the following rewritten paragraph:

The frame of the invention is designed to be imaged by the use of axial images taken in serial sections along the z-axis (longitudinal) of the system. Fiducials seen on axial scan images can be localized by placing a cursor over the center of each fiducial and obtaining the x - y display screen coordinates. This screen coordinate data is used to calculate the z-axis position of a target and its x and y coordinates in stereotactic frame space according to the invention. Note that for every incremental change in the value of x along fiducial 5, the ~~range~~ change of the z value is 12.5x. Localization of a z position solely derived by the use of the slope of fiducial 5 is, therefore, not sufficiently accurate to precisely define a position for incremental changes of x. Resolution of a position along z can be improved by the use of a resolver system which increases the precision of localization along z with changes in the value of x. This has been achieved by the use of ~~a~~ two repetitive trigonometric waveform fiducials, ~~a $\pi/2$ horizontal~~ phase linked, by the offset difference $\pi/2$, and comprising a sine and cosine wave fiducial pattern each with an amplitude of 40mm and a phase length (period) of 250mm. In this arrangement, the maximal slope angle of each phase is 45° and there are a series of repetitive waveforms with a total of 4.5 phases (periods) forming the 1125 mm preferred length of the frame of the invention. The use of the resolver system of at least two offset fiducials improves the positional resolution along the z-axis for each incremental change of x from a factor of 12.5x to 1x because the intersection of the x-axis, when crossing one fiducial near the peak of the waveform where the phase angle is at or near 90 degrees, will cross the other fiducial axis at 45 degrees. That is, for every incremental change along x, z changes by the same value ($\Delta z=\Delta x$). The sine/cosine ~~wave patterns~~ waveforms have an ~~angular~~ offset relationship to each other such that lines passing through nodal points of each ~~would~~ waveform form a right angle triangle with its base at the origin of the frame and the sine wave along the hypotenuse.

Please add the following new paragraph after the paragraph ending on line 24 of page 14 of the specification:

The resolver has at least two fiducials, 4, 6, that are oriented generally parallel to the z-axis of the frame and laterally spaced apart. Each fiducial has a repetitive trigonometric waveform. In the preferred embodiment the first waveform 4, is a cosine function and the second waveform 6 is a sine function. The position of the second fiducial waveform, 6, is longitudinally offset to the position of the first fiducial

waveform, 4. The offset, expressed angularly, is $\pi/2$. Therefore, an axial image plane (x, y) will intercept both fiducial waveforms at complementary locations assuring a phase angle of 45 degrees at one of the intersections. The straight line or third fiducial 5 is positioned non-parallel to the z-axis and is laterally positioned between fiducials 4, 6. Fiducials 7, 8, are quality assurance fiducials and are straight lines parallel to the longitudinal z-axis of the frame and are used as an error check to differentiate the patient's left hand side from the right hand side where fiducials 2, 3 are positioned.